

REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 1-59 are currently pending.

Applicants note that the Information Disclosure Statement filed on October 23, 2002 has not been considered as it allegedly fails to comply with 37 C.F.R. § 1.98(a)(1). Upon review of this Information Disclosure Statement, Applicants note that the only information which was submitted therewith was a copy of an International Search Report related to documents cited by a foreign patent office which were previously submitted in an IDS filed on November 15, 2001. Since all of the documents referenced in the Search Report have been considered and made of record by the Examiner, Applicants see no need to resubmit the Search Report conveyed by the Information Disclosure Statement of October 23, 2002.

Claims 31-56 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Office Action indicates that the specification fails to describe limitations relating to "sweeping a control signal of the tunable band-pass filter between a minimum tuning value and a maximum tuning value."

Initially, Applicants respectfully submit that the referenced method step does, on its face, comply with the written description requirement of 35 U.S.C. § 112, first paragraph. In this regard, it should be noted that claim 31 is an originally filed claim that was present with the specification as of the filing date of July 5, 2001. As stated in MPEP § 2163(I)(A), "there is a strong presumption that an adequate written description of the claimed invention is present when the application is filed." It is respectfully submitted that, in this case, this strong presumption that the written description requirement is met by the originally filed claim 31 is further supported by the originally filed specification. Turning, for example, to paragraph [0167] of the specification, it can be seen that the filter bias signal VTUNE 1315 may be swept between two predetermined values (e.g., a minimum and a maximum bias value) within the tunable range of the pre-selection filter 1303. Thus, the phrase

referenced in the Official Action refers to varying values associated with the filter bias signal within a predetermined range using, for example, different steps in value. Purely as an example, if the filter bias signal had a minimum value of zero and a maximum value of 100, one could sweep the control signal through the values from zero to 100 in steps of 1 or 2 or 50. It is respectfully submitted that one skilled in the art, reviewing Applicants' originally filed application and claims in their entirety, would have understood that Applicants possessed the invention set forth in Applicants' claim 31-56 combinations at the time of filing for at least the foregoing reasons. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

Claims 1-56 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Fraser (U.S. Patent No. 4,528,698). Prior to discussing this ground of rejection in detail, a brief summary of exemplary embodiments of Applicants' tuning arrangements and methods for tuning a receiver is provided below in order to highlight some of the advantageous characteristics thereof.

According to exemplary embodiments in the present invention, the need for tunable reference filters in a radio receiver's front end can be eliminated through the use of calibration arrangements for pretuning the front end pre-selection filters of the receiver to a desired center frequency. As an example, the Examiner's attention is directed to Figures 13-18 of the present specification and the corresponding application text beginning on page 33, paragraph [0145]. Referring to Figure 13, during normal receiver operation an RF signal is received by an antenna and supplied to a tunable band-pass filter 1303. The tunable band-pass filter 1303 tunably selects channels within the desired frequency band for downstream signal processing.

Moreover, the filter response of the band-pass filter 1303 may be tuned by adjusting the value of a filter bias signal VTUNE 1315. In the exemplary tuning arrangement of Figure 13, the tuning circuit includes a noise source 1301 that is coupled to the input of the tunable band-pass filter 1303. During the tuning phase of operation, the output power associated with wide-band noise being filtered by the tunable filter 1303 is measured by a signal detector 1309. Based on the measured

output powers during the tuning phase, tuning controller 1313 can vary a bias signal to a tunable filter until such time as the desired filter response is achieved.

Thus, the tunable filter 1303 according to these exemplary embodiments of the present invention provides the dual function of band-pass filtering to an RF signal during non-tuning operation of the receiver and filtering a tuning signal (e.g., a noise source) to determine a suitable bias control signal during a tuning operation phase of the receiver. This enables these exemplary embodiments of the present invention to eliminate tunable reference filters which were used in the "replica-biasing approach" described with respect to the exemplary embodiments of Figures 1-12.

Unlike these exemplary embodiments of the present invention, and Applicants' claimed combinations, Fraser describes a tuning system for an RF receiver which includes both a voltage tunable preselector filter 12 and a voltage tunable injection filter 15. The voltage tunable injection filter 15 is used to, among other things, determine the bias level output by bias control device 18 for controlling the voltage tunable preselector filter 12. Thus, Fraser describes a tuning system which is fundamentally different from those described above which avoid the need for an extra, replica filter in the tuning system of the preselection filter in the receiver front end. This fundamental difference between the tuning system of Fraser and Applicants' claimed tuning arrangements and methods results in a number of claim elements which are not taught or suggested by Fraser as pointed out below with respect to each of the independent claims.

Turning first to Applicants' claim 1 combination, this claim recites, among other things, a tunable band-pass filter for receiving an RF signal from a connection to an antenna and filtering said RF signal and a noise source coupled to an input of the tunable band-pass filter for introducing a wide-band noise signal into the front end circuit to generate a filtered noise signal. This dual function of a single filter is not taught or suggested by Fraser.

Reviewing the Official Action, it is noted that, with respect to the originally filed claims, either the voltage tunable preselector filter 12 or the voltage tunable injection filter 15 of Fraser were alleged to correspond to Applicants' claimed tunable band-

pass filter. It is respectfully submitted that neither of these filters can reasonably be said to correspond to Applicants' claimed tunable band-pass filter because neither of these filters are both connected to an antenna for receiving and filtering an RF signal and connected to a noise source for filtering a wide-band noise signal as part of the tuning process. Consider, in this regard, that although voltage tunable preselector filter 12 of Fraser is connected to an antenna, it is not connected to local oscillator 14 in such a way as to enable filter 12 to filter a wide-band noise signal from local oscillator 14. Similarly, although the voltage tunable injection filter 15 of Fraser is connected to local oscillator 14, it is not connected to an antenna in such a way as to enable voltage tunable injection filter 15 to filter received RF signals. Fundamentally, these differences are indicative of the dual filter nature of the tuning system of Fraser as compared to the ability of exemplary embodiments of the present invention to avoid using a replica filter as part of the preselection tuning process.

Similar comments apply to Applicants' claim 19 and 31 combinations. Thus, neither filter 12 nor filter 15 in the tuning system of Fraser is both connected to an antenna for receiving RF signals and connected to receive and filter a tuning signal during a radio tuning phase. Instead, the filter 12 of Fraser filters RF received signals and the filter 15 of Fraser filters a tuning signal from local oscillator 14. With respect to Applicants' claim 31 combination, again the same tunable band-pass filter is not used in Fraser to both filter a tuning signal and filter RF signals.

Accordingly, it is respectfully submitted that Fraser does not anticipate Applicants' independent claim 1, 19 and 31 combinations. Moreover, the dependent claims are also respectfully submitted to be patentable in view of Fraser for at least the reasons set forth above with respect to the independent claims from which they depend. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

Claims 1-56 also stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Lindquist et al. (U.S. Patent Publication No. 2002/0151287). Specifically, the Official Action simply states that Lindquist et al. "plainly and completely disclose the claimed invention of the present application." Applicants

respectfully disagree. Comparison of the Lindquist et al. publication with the specification of the present application will indicate, among other things, that they share a partial common description with respect to Figures 1-12 and the corresponding text. However, the present application also includes Figures 13-18 and additional text corresponding thereto. It is respectfully submitted that the Lindquist et al. patent publication does not teach or suggest the claimed combination of features set forth in Applicants' independent claim 1, 19 and 31 combinations.

Should the Examiner maintain this ground of rejection in a subsequent communication, he is respectfully requested to point out more specifically the portions of the Lindquist et al. patent publication which he believes correspond to each of Applicants' claimed elements, particularly noting those elements identified above during the discussion of the Fraser patent.

Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

All of the objections and rejections raised in the Office Action having been addressed, Applicants respectfully submit that this application is in condition for allowance and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response or the application in general, he is urged to contact the undersigned at (540) 361-1863.

Respectfully submitted,

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